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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,201	06/30/2003	Gaurav Sharma	114790	1200

27074 7590 12/28/2007
OLIFF & BERRIDGE, PLC.
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER

HUNG, YUBIN

ART UNIT	PAPER NUMBER
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2624

NOTIFICATION DATE	DELIVERY MODE
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12/28/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction27074@oliff.com
jarmstrong@oliff.com

Office Action Summary

Application No.

10/604,201

Applicant(s)

SHARMA ET AL.

Examiner

Yubin Hung

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 12-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Response to Amendment/Arguments

1. This action is in response to amendment filed 11/05/07, which has been entered.
2. Claims 1-11 are still pending.
3. Applicant's affirmation of the election of Species I (the species of Fig. 10, related to claims 1-11) is acknowledged. While in the 08/06/07 telephone conversation applicant's representative, Mr. Thomas J. Pardini, made the election with traverse, this reply has not distinctly and specifically pointed out any supposed errors in the election of species requirement, therefore the election is treated as election without traverse.
4. In view of Applicant's amendment, the objection to claims 3-5 and 8 has been withdrawn.
5. Applicant's amendments have rendered moot the 35 USC § 103 rejections of claims 1-11. However, upon further consideration, a new ground(s) of rejection is made in view of Sindhu et al. (US 6,175,650); see below.

DETAILED ACTION

Specification

6. Claims 1, 3, 5-7 and 9-11 are objected to because of the following informalities:
- Claim 1, line 6; Claim 3, line 2; Claim 5, line 2; Claim 6, line 3; Claim 10, last line: "characteristics" should have been "characteristic"
 - Claim 3, line 2; Claim 5, line 2: "are" should have been "is"
 - Claims 1, 5-7 and 9-11: for consistency replace all instances of "color profile" with "color characterization profile"

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 8 and 9 are rejected under 35 U.S.C. 102(b) as being unpatentable over Tashiro et al. (US 5,748,773), and further in view of Sindhu et al. (US 6,175,650).

9. Regarding claim 1, Tashiro discloses

- scanning the printed image
[Abstract; Ref. 1022 of Figs. 2 & 3 (scanner); Col. 5, lines 50-54]
- determining a spatial characteristic of the printed image from the scanned image data
[Fig. 2, ref. 38; Fig. 8, refs. S1 & S2; Col. 6, lines 37-41 (note that the histogram is formed using both the luminance and the chrominance information); Col. 7, lines 66-67; Col. 9, lines 39-50]
- comparing the spatial characteristics of the scanned printed image with spatial characteristic associated with color characterization profiles
[Fig. 8, ref. S3; Fig. 11, refs. S31-S33; Col. 10, lines 9-19. Note that hmax, lmax, lmin lpeak, HLIM, ILIM and IWLIM are spatial characteristics that are used in the comparison]
- selecting one or more color profiles based on the comparison of the spatial characteristics
[Fig. 8, ref. S3; Fig. 11; Figs. 12-14 (conversion tables, or profiles, selected based on comparison result); Col. 11, lines 12-53]

Tashiro does not expressly disclose that the spatial characteristic is based on a positioning of at least one pixel relative to another pixel. However, Sindhu discloses using a histogram of texture information (a spatial characteristic) to determine the type of image blocks (each image block is an image per se) [Figs. 8a-8d and Col. 7, line 61-Col. 11, line 48; note that both row texture and column texture, from which the histogram is built, are based on a positioning of at least one pixel relative to another pixel, as is clear from Figs. 8b & 8c].

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Tashiro with the teachings of Sindhu as recited above to obtain the invention as specified in claim 1. The reason for doing so would have been because Sindhu's approach is reliable over a very wide class of images and is simple enough that most of it can be implemented in hardware, as Sindhu indicates in Col. 7, lines 63-67.

10. Regarding claim 8, Sindhu discloses that the determining of a spatial characteristic comprises

- statistically analyzing the scan of the printed image and determining spatial variations in the printed image based at least on the results of the statistical analysis of the scanned image data [Figs. 8a-8d and Col. 7, line 61-Col. 11, line 48; note that both row texture and column texture, from which a histogram of texture (the spatial characteristic) is built, are based on a positioning of at least one pixel relative to another pixel and represent a form of spatial variation]

11. Regarding claim 9, Tashiro further discloses that the selection of one or more color profiles is made automatically [Fig. 8, ref. S3; Fig. 11; Figs. 12-14; Col. 11, lines 12-53]

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12. Claims 2, 3, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tashiro et al. (US 5,748,773) and Sindhu et al. (US 6,175,650) as applied to claims 1, 8 and 9 above, and further in view of Kasutani (US 7,236,652) and Sampath et al. (US 6,665,425).

13. Regarding claim 2, the combined invention of Tashiro and Sindhu discloses all limitations of its parent, claim 1, in particular, the comparison of spatial characteristics, but not expressly the following:

- wherein the spatial characteristics associated with color characterization profiles are determined from scans of color characterization targets used in creating the color characterization profiles

However, Kasutani discloses associating the feature vector (i.e., characteristics that can be used to identify the image) determined from an image with that image [Fig. 1, refs.

102, 103, 202 & 203; Col. 12, lines 24-34] and Sampath discloses using test patterns (color characterization targets) to calibrate a document processing system [Fig. 1, refs. 110 & 120; Fig. 10, refs. S150, S180 & S230; Col. 2, lines 59-63; Col. 6, line 60-Col. 7, line 7; Col. 11, lines 23-46]. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined invention of Tashiro and Sindhu with the teachings of Sampath and Kasutani as recited above to obtain the invention as specified in claim 2. The reason for doing so would have been to be able to calibrate the system to properly process the data having the same characteristics as the test patterns, as well as to select the most suitable profile (using the characteristics) derived from the image (of a target) so that the system can be properly calibrated for the kind of data to be processed.

14. Regarding claim 3, note that per the analysis of claim 2, the test pattern used for quality assessment in order to perform calibration as required is analyzed first to generate data (including spatial characteristics) [Sampath: Col. 6, line 60-Col. 7, line 6] in one diagnostic routine [Sampath: Fig. 10], i.e., at the same time. (Note that to perform the calibration it would have been necessary to also generate required data such as a color characterization profile.)

15. Regarding claims 6 and 7, Kasutani further discloses

- (claim 6) wherein the comparing comprises computation of a distance measure between the spatial characteristic of the image and a spatial characteristics associated with the color profile (claim 7) wherein the selecting further comprises choosing one or more color profiles which are closest with respect to the distance measure

[Fig. 1, ref. 109; Col. 13, lines 27-33]

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16. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tashiro et al. (US 5,748,773), Sindhu et al. (US 6,175,650), Kasutani (US 7,236,652) and Sampath et al. (US 6,665,425) as applied to claims 2, 3, 6 and 7 above, and further in view of TIFF6 (TIFF Revision 6.0, June 03, 1992, pp. 8, 9, 13-16).

17. Regarding claims 4 and 5, the combined invention of Tashiro, Sindhu, Kasutani and Sampath discloses all limitations of their parent, claim 3 but not the following:

- (claim 4) wherein the spatial characteristics associated with the color characterization profiles are stored with the color characterization profiles
- (claim 5) wherein the spatial characteristics associated with a color profile are stored within private tags in the color characterization profile

However, TIFF teaches using a data structure that has private tags for storing special data (e.g., the spatial characteristics recited in the claim), along with the main data (e.g., the profile). It therefore would have been obvious to one of ordinary skill in the art to modify the combined invention of Tashiro, Sindhu, Kasutani and Sampath with the teachings of TIFF6 as recited above to obtain the inventions as specified in claim 4 and 5. The reason would have been to have the profile to be readily available (and therefore improves processing efficiency) when it is selected (by comparison of the associated spatial characteristics), as well as to allow applications not having the ability

to use the spatial characteristics to ignore them since they are only meaningful to the inventive entity, as indicated in TIFF6, P. 8 (regarding private fields).

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18. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tashiro et al. (US 5,748,773) and Sindhu et al. (US 6,175,650) as applied to claims 1, 8 and 9 above, and further in view of Chen (US 6,941,121) and Maeda et al. (US 5,682,466).

19. Regarding claim 10, the combined invention of Tashiro and Sindhu discloses all limitations of its parent, claim 1 but not the following:

- wherein selecting one or more color profiles is performed by blending multiple color profiles using at least weighting factors determined from said comparison of the spatial characteristics

However, Chen teaches using weighted combination of lookup tables for calibration [Col. 11, lines 59-67] and Maeda further teaches having the weights determined by similarity (inherently resulted from a comparison) [Fig. 7, ref. 708; Col. 9, line 55-Col. 10, line 16].

Therefore it would have been obvious to one of ordinary skill in the art to modify the combined invention of Tashiro and Sindhu with the teaching of Chen and Maeda as recited above to obtain the invention as specified in claim 10. The reason would have been to reduce sensitivity to the comparison result (which is well known to have built-in uncertainty), as indicated by Chen in Col. 10, lines 66-67 (the uncertainty in that case

being the transient fluctuations); having weights depending on the similarity also can improve the accuracy, as Maeda indicates in Col. 10, lines 11-15.

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20. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tashiro et al. (US 5,748,773) and Sindhu et al. (US 6,175,650) as applied to claims 1, 8 and 9 above, and further in view of Newman (US 6,603,483) and Milton et al. (US 2003/0117639).

21. Regarding claim 11, the combined invention of Tashiro and Sindhu discloses all limitations of its parent, claim 1 but not the following:

- wherein selecting one or more color profiles comprises: automatically processing a group of pre-selected color profiles to generate candidate color profiles; and manually selecting one or more color profiles from the candidate color profiles

However, Newman teaches having a user select a profile from a list [Fig. 5A, ref. 501; Col. 11, lines 20-25] and Milton further teaches selecting candidate profiles from a known (i.e., pre-selected) profiles [Fig. 7a, refs. 500 (known profiles) & 514 (select candidates); P. 9, paragraph 68].

Therefore it would have been obvious to one of ordinary skill in the art to modify the combined invention of Tashiro and Sindhu with the teaching of Newman and Milton as recited above to obtain the invention as specified in claim 11. The reason would have

been to satisfy the user's desire [Newman: Col. 11, lines 23-25], as well as to be more precise in the selection of the profiles to use [Milton: Paragraph 68, last 3 lines].

Conclusion and Contact Information

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

23. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

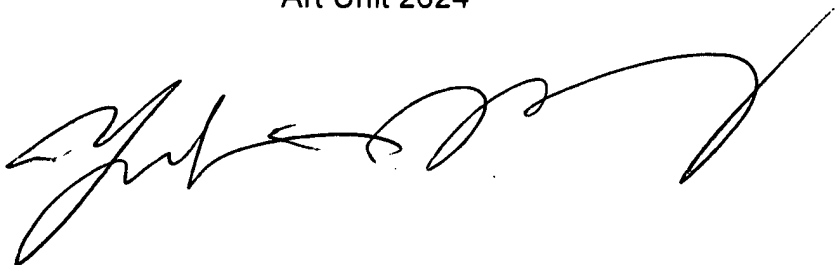
24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yubin Hung whose telephone number is (571) 272-7451. The examiner can normally be reached on 7:30 - 4:00.

25. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew C. Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Yubin Hung
Patent Examiner
Art Unit 2624

December 21, 2007

A handwritten signature in black ink, appearing to read 'Yubin Hung', is written over the printed name and title.